Entry of Amendment Requested

Applicants respectfully request entry of this amendment by the Examiner since it raises no issues of new matter; and since the claims as amended do not require any further consideration or search by the Examiner. At the least, Applicants' submit that the amendment should be entered since it reduces the number of substantive and/or formal issues to place the application in better form for appeal.

Summary of the Interview

Initially, Applicant's representative wishes to thank Examiners Ferguson and Christensen for their granting of an interview after final, the context of which is summarized below.

Applicant's representative initially presented a general overview of the invention and then focused on specific aspects regarding the obtaining of field image signals in both even and odd fields by adding signal charges from individual pixels, as claimed in claims 1 and 5. Agreement as to the claimed method steps of adding the signal charges could not be reached. Examiner Christensen indicated that the claimed steps of obtaining image field signals were sufficiently broad to read on the method disclosed in Yokoyama, which

teaches of adding charges in first and second fields (alleged to be analogous to the even and odd fields of the present invention).

Examiner Christensen then suggested that the subject matter "the same color" in the claimed obtaining steps of claims 1 and 5 be expanded upon or clarified, since the method of adding adjacent pixels aligned vertically within the same color filter (as evidenced by Fig. 2) to obtain image field signals for an odd or even field did not appear to be taught by any of the applied patents.

Applicant's representative then shifted focus to claims 7-10. The Examiners did not appear receptive to the distinctions made regarding changing the second charge storage time (or amplifier gain) in the recording mode as a function of the first charge storage time, or as a function of the field image signals after shifting to the recording mode. Specifically, Examiner Christensen alleged that lowering the shutter speed in the recording mode in Sasaki had the same effect as increasing charge storage time in the recording mode, and that Parulski described taking at least twice as long to read out a still image in the recording mode (citing the paragraph bridging col. 6 and 7 of Parulski et al.

However, both Examiners appeared receptive to a claim limitation which positively recited the application of a multiplier (such as a doubling factor) in each of claim 7 and 9. Further, Applicant's representative suggested that in

addition to including this limitation, he could also include an advantage or benefit obtained from applying the multiplier or doubling factor, which in the present application is to allow for luminance and balance of a recorded still picture to be set in the same range as a moving picture displayed on an electronic view finder of the still camera.

Synopsis of the Preferred Embodiment

Referring to Fig. 2-4, a CCD image sensor 2 including a plurality of adjacent horizontal scanning rows of individual pixels 3 and a plurality of vertically adjacent color filters 4B, 4G and 4R is driven by a controller 10 through a CCD driver 6 on the basis of vertical synchronizing signals generated at a frequency of 1/60 seconds (see Fig. 3). In the movie mode, the CCD image sensor 2 is read according to pixel combination.

Specifically, and as discussed in the interview, the signal charges of each pixel 3 of the even horizontal scanning lines of the CCD are added to a signal charge of one of two adjacent individual pixels 3 disposed in the same color filter column, thereby providing image signals for a first or odd field. To obtain field image signals of an even field, the signal charge of each pixel of an even horizontal scanning line is added to a signal charge stored in one of those pixels detecting the same color in the other of the two adjacent odd horizontal

scanning lines.

Another aspect of the present application is the increasing of the charge storage time when switching between the movie mode and recording mode, a second charge storage time is determined by applying a doubling factor to the first charge storage time. As discussed in the interview, this allows the luminance and color balance of the recorded still picture to be set in the same range as the moving picture displayed on the view finder. The same effect will result from applying a doubling factor (doubling) to a first set gain of an amplifier 8 in the recording mode.

Prior Art Rejections

The Examiner has rejected claims 1-6 under 35 U.S.C. § 103(a) as being unpatentable over Sasaki (U.S. Patent No. 4,837,628) in view of Yokoyama (U.S. Patent No. 5,239,380), and further in view of Morimura et al. (U.S. Patent No. 4,570,178), Miyazaki (U.S. Patent No. 4,929,824) and Parulski et al. (U.S. Patent No. 5,828,406). Further, added claims 7-9 are rejected under 35 U.S.C. § 102(b), as being anticipated by Sasaki; claims 8 and 10 under 35 U.S.C. § 103(a) as being unpatentable over Sasaki in view of Parulski et al. These rejections are respectfully traversed.

The Examiner alleges that Sasaki discloses all the claimed subject matter

of the present application, save for the claimed field addition steps, automatic exposure mechanism and sequential scanning steps of independent claims 1 and 5, as well as the disclosure of 3-color separation filters in the preamble of independent claim 5. However, Sasaki appears directed to a general electronic still camera which discloses, at best, no more than the structure of a conventional electronic still camera. Of the references cited by the Examiner, Yokoyama appears to be the most relevant and is discussed in detail below.

Yokoyama

The Examiner cited Yokoyama to teach the steps of obtaining field signals for odd and even fields. Yokoyama discloses a method of driving a solid state imaging device where signal charges are read out simultaneously and independently from all light receiving members of the imaging device and a vertical CCD register.

According to Yokoyama, signal charges are transferred by two-by-two transfer steps in one horizontal blanking period of time, and the signal charges obtained from the adjacently disposed light receiving members can be added to each other through a horizontal CCD register so that the field storage reading can be made possible (see, column 3, lines 40-47).

Distinction Over the Prior Art: Claims 1-6

Initially, Applicant has amended claims 1 and 5 in response to the Examiners' suggestions at the interview, in an effort to further clarify the color filters, their orientation in the solid state device, and that adjacent pixels within a "same color" column are added to obtain even and odd image field signals.

Accordingly, and as discussed in the interview, Applicant respectfully submits that Sasaki fails to teach, either alone or in combination with the other references, a method of controlling an electronic still camera having a solid state imaging device including a plurality of adjacent horizontal scanning lines of individual pixels intersected by a plurality of adjacent color filters, each of a distinct color, forming columns in the solid state imaging device so that individual pixels of the plurality of adjacent horizontal scanning lines within a particular color filter detect a same color, comprising at least: obtaining field image signals of an odd field by adding a signal charge stored in each of those pixels aligned in even horizontal scanning lines to a signal charge stored in one of those pixels detecting the same color in one of two adjacent odd horizontal scanning lines, each of those pixels in the even and adjacent odd scanning lines vertically aligned within the same color filter; in combination with the

other step limitations claimed in claims 1 and 5.

This is significant in that the even field signal is obtained by adding signal charges of pixels adjacent to one another (one of the two pixels adjacent to the "middle" even horizontal scanning line pixel) in the same vertical color filter which intersects the plurality of adjacent horizontal scanning lines. Additionally, the Examiner already admits that Sasaki fails to specifically teach either of the obtaining steps of independent claims 1 and 5. Further, even assuming arguendo that Yokoyama could be combined with Sasaki, which Applicant does not admit, Yokoyama would still fail to make up for the above mentioned deficiencies of Sasaki for the following reasons.

Although Yokoyama arguably teaches of the addition of pixels in different fields (first and second) the addition of pixels are the same, relative to both fields, regardless if the field is odd or even. Moreover, there is no disclosure in Yokoyama of adding pixel charges of adjacent horizontal scanning lines which detect the same color (since in the present application these pixels are vertically aligned within the same color filter, they detect the same color).

Finally, since none of the other cited art patents (Morimura et al. Miyazaki or Parulski et al.) make up for the deficiencies present in both Sasaki and Yokoyama, Applicant submits that, based on the interview and for at least the above reasons, that claims 1 and 5 (and claims 2-4 and 6, dependent

thereon) are allowable.

Distinction Over the Prior Art: Claims 7-10

Applicant has canceled claims 8 and 10 without prejudice or disclaimer of the subject matter contained therein, thus the rejection regarding these claims is now moot. Based on the interview, Applicants have amended claims 7 and 9 to positively claim the application of a doubling factor with respect to charge storage time and amplifier gain in claims 7 and 9. Accordingly, and based on the comments of the interview, Applicant submits that neither Sasaki nor Parulksi et al. teach or suggest of applying a doubling factor to determine a second charge storage time in the recording mode, or to set a second gain in the recording mode, which is advantageous in allowing for luminance and balance of a recorded still picture to be set in the same range as a moving picture displayed on an electronic view finder of the still camera.

CONCLUSION

Accordingly, in view of the above amendments and remarks, reconsideration of the objections and rejections and allowance of each of the claims 1-7 and 9 in connection with the present application is earnestly solicited. Should there be any outstanding matters which need to be resolved in the present application, the Examiner is respectfully requested to contact

Matthew J. Lattig, Registration No. P-45,274 at the telephone number of the undersigned below to conduct an interview.

Applicant respectfully petitions under the provisions of 37 CFR 1.136(a) and 1.17 for a one-month extension of time in which to respond to the Examiner's Office Action. The Extension of Time Fee in the amount of $110.00 is attached hereto.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By: _____

John A. Castellano
Registration No. 35,094 Reg. No. 35,416
P.O. Box 747
Falls Church, Virginia 22040
Telephone: (703) 205-8000

JAC/MJL/ll